



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,778	12/17/2001	Cornelius Peter	TRW (AEC) 6002	6631

7590 01/03/2003
TAROLLI, SUNDHEIM, COVELL,
TUMMINO & SZABO L.L.P.
1111 LEADER BUILDING
526 SUPERIOR AVENUE
CLEVELAND, OH 44114-1400

EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 01/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,778

Applicant(s)

PETER ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by English et al.

Regarding claim 1, English et al. show a drive unit for a fan in a vehicle, comprising a brushless DC electric motor with a rotor (14) and a stator, an electronic actuation system (34) and a housing (10) molded of plastics, said electronic actuation system being surrounded by said housing and said housing supporting said electric motor (Figure 2).

Regarding claim 2, it is noted that English et al. also show said housing having an integrally molded bearing sleeve (26) for mounting said rotor of said electric motor, said rotor being an external rotor.

Regarding claim 3, it is noted that English et al. also show said housing being arranged on a suction side of said fan and having air inlet openings for cooling of electronic components of said electronic actuation system and for components of said electric motor.

Regarding claim 4, it is noted that English et al. also show said external rotor being generally pot-shaped and having an end face attached to a bearing shaft (20).

Regarding claim 5, it is noted that English et al. also show said bearing shaft being rotatably mounted in said bearing sleeve by means of bearings (22, 24) placed into said bearing sleeve.

Regarding claim 6, it is noted that English et al. also show said bearing sleeve being surrounded by a hollow-cylindrical stator (36) of said electric motor.

Regarding claim 7, it is noted that English et al. also show said bearing sleeve having a shoulder (above 38) on which an inner circumferential edge of said stator bears.

Regarding claim 8, it is noted that English et al. also show said stator being provided with axially projecting connection tags (near 56, Figure 2) that extend through openings (inner area where 34 located) of housing parts surrounding said bearing sleeve and that can be connected to a printed circuit board (34) arranged in an interior of said housing.

Regarding claim 9, it is noted that English et al. also show said housing having a cylindrical depression (32) surrounding said bearing sleeve and into which extends a circumferential edge of said external rotor.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over English et al. in view of Matsumoto.

Regarding claim 10, English et al. show all of the limitations of the claimed invention except for said housing being assembled of two housing parts, with a supporting upper housing part that comprises said bearing sleeve and a lower part that closes an open main side of said upper part.

Matsumoto shows the housing being assembled of two housing parts, with a supporting upper housing part that comprises said bearing sleeve and a lower part (22) that closes an open main side of said upper part for the purpose of enclosing the circuit board.

Since English et al. and Matsumoto are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to assemble the housing with two housing parts, with a supporting upper housing part that comprises said bearing sleeve and a lower part that closes an open main side of said upper part as taught by Matsumoto for the purpose discussed above.

Regarding claim 11, it is noted that Matsumoto also shows said upper housing part having laterally projecting assembly tabs (stepped portion for 22).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over English et al. in view of Matsumoto as applied to claim 11 above, and further in view of Hayashibara et al.

Regarding claim 12, the fan unit of English et al. modified by Matsumoto includes all of the limitations of the claimed invention except for said lower housing part and said upper housing part being connected with each other by latching means.

Hayashibara et al. show said lower housing part and said upper housing part being connected with each other by latching means (22) for the purpose of connecting the housing parts together.

Since English et al., Matsumoto and Hayashibara et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to connect said lower housing part and said upper

housing part with each other by latching means as taught by Hayashibara et al. for the purpose discussed above.

7. Claims 13, 14 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over English et al. in view of Sunaga et al.

Regarding claim 13, English et al. show all of the limitations of the claimed invention except for said electronic actuation system having a power part and a control part, which are mounted on separate circuit boards, a circuit board for said power part being made in that a conductor structure stamped out of sheet metal is encapsulated with plastic by means of injection-molding.

Sunaga et al. show said electronic actuation system having a power part and a control part (33), which are mounted on separate circuit boards, a circuit board for said power part (41) being made in that a conductor structure stamped out of sheet metal is encapsulated with plastic by means of injection-molding for the purpose of reducing heat.

Since English et al. and Sunaga et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make said electronic actuation system with a power part and a control part, which are mounted on separate circuit boards, a circuit board for said power part being made in that a conductor structure stamped out of sheet metal is

Art Unit: 2834

encapsulated with plastic by means of injection-molding as taught by Sunaga et al. for the purpose discussed above.

Regarding claim 14, it is noted that Sunaga et al. also show said conductor structure having contact tags that project from an edge of said circuit board.

Regarding claim 17, it is noted that Sunaga et al. also show said circuit board having exposed metal surfaces of said conductor structure thermally contacted by power semiconductors of said electronic actuation system.

Regarding claim 18, it is noted that Sunaga et al. also show said control part of said electronic actuation system comprising a printed circuit board spaced from and parallel to said circuit board of said power part, said power semi conductors having bent connection tags that extend through openings in said circuit board and are connected to said printed circuit board of said control part.

Regarding claim 19, it is noted that English et al. also show said housing has air inlet openings next to said power semiconductors.

Regarding claim 20, it is noted that English et al. also show said bearing sleeve having a guide channel for cooling air that has entered through said air inlet openings of said housing.

Regarding claim 21, it is noted that Sunaga et al. also show said rotor being generally pot shaped and having air outlet openings on an end face remote from said air inlet openings of said housing.

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over English et al. in view of Sunaga et al. as respectively applied to claims 14 and 13 above, and further in view of Ineson et al.

Regarding claim 15, the fan unit of English et al. modified by Sunaga et al. includes all of the limitations of the claimed invention except for said contact tags projecting from an outside of said housing and are surrounded by at least one plug collar molded with said housing.

Ineson et al. show said contact tags projecting from an outside of said housing and are surrounded by at least one plug collar (68) molded with said housing for the purpose of providing electrical connection.

Since English et al., Sunaga et al. and Ineson et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to project said contact tags from an outside of said housing and surround it with at least one plug collar molded with said housing as taught by Ineson et al. for the purpose discussed above.

Regarding claim 16, it is noted that Ineson et al. also show said circuit board having connection openings arranged in a circle, said connection tags of said stator being adapted to be inserted into said connection openings, and said conductor structure having terminal parts adjacent to said connection openings.

Information on How to Contact USPTO

Art Unit: 2834

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
December 24, 2002

